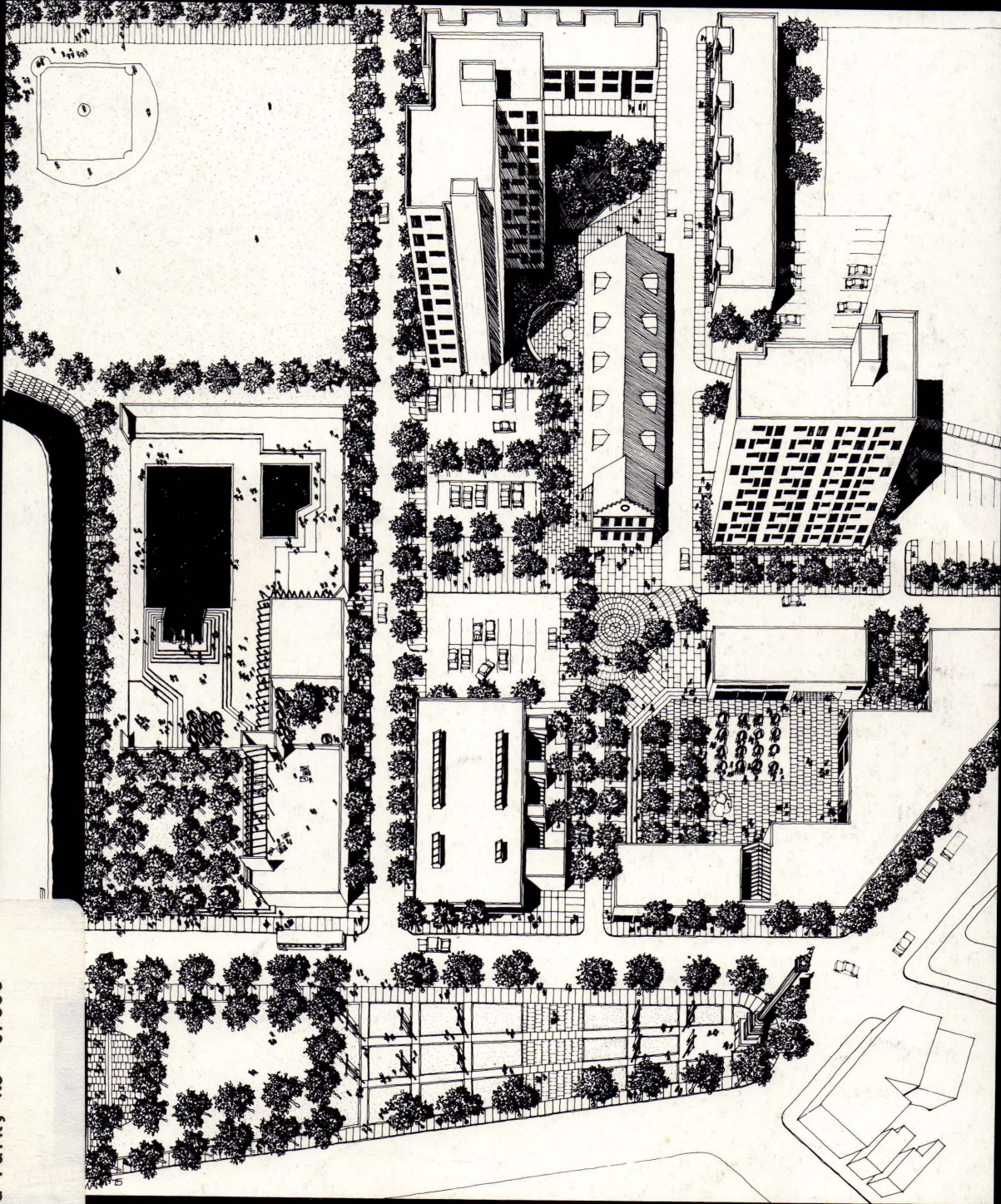


new jersey Architecture



July/Aug/Sept 1982

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Albert F. Zaccone, AIA
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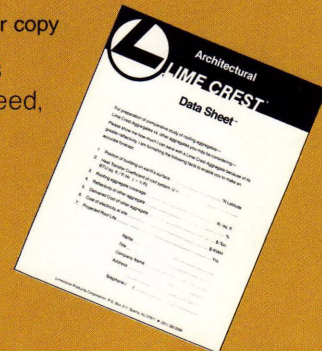
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| 0-10% | passes ½" square sieve |
| 0-5% | passes ¾" square sieve |

Application rate is to be in accordance with specifications of the insulation manufacturer. Meets ASTM Specification D448 #5.

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| 0-10% | passes #4 square sieve |
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Application rate is to be in accordance with specifications of the insulation manufacturer. Meets ASTM Specification D448 #57.



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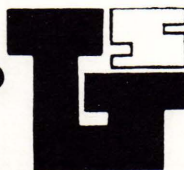
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Views and opinions expressed in ARCHITECTURE new jersey are those of the writers and not necessarily those of the New Jersey Society of Architects.

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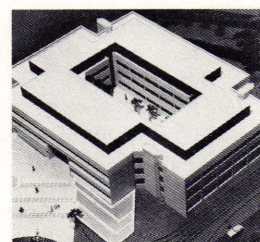
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Cover: Aerial view of North-25 Development, Trenton, and the reconstruction of the edge of the Delaware-Raritan Canal.
Architect: Clarke & Caton, Trenton

checklist

Michael Graves, FAIA, has been named one of the top ten architects in the U.S. in a recent survey conducted by *The Buildings Journal*. The top ten architects were credited with having an impact on architectural direction and design of significant non-residential structures.

M. Neville Epstein, AIA, has been named a partner in the architectural firm of *Geddes, Brecher, Qualls, Cunningham*, in Princeton, a firm that earned the coveted Architectural Firm Award from the AIA in 1979.

Bernard Hersh, AIA, has been elected Mayor of the Borough of Fairlawn. A councilman since 1975, and a former deputy mayor, he was re-elected to a three-year term in June.

"*Gardens of Illusion*" for which *Philetus H. Holt, III, AIA*, did the illustrations, won the Alice Davis Hitchcock Book Award of the Society of Architectural Historians. The award is given for "The Most Distinguished Work of Scholarship in the History of Architecture Published by a North American Scholar During the Year 1981." (See article in this issue).

Herbert Belton, AIA, received the Community Involvement Award from New Jersey Bell because of his extensive community involvement. He is a Board member of the Orange Chamber of Commerce, Secretary of the Orange Economic Development Corporation, President of the Sickle Cell Education and Service Foundation of NJ and a member of the Board of Directors of the Arts Advisory Council of Orange.

Charles M. Decker, AIA, Chief of the Bureau of Construction Code Enforcement, of the Department of Community Affairs, has been appointed to the National Executive Committee of the National Institute of Building Sciences.

Michael Graves & Associates won an invitational competition for the design of a corporate headquarters building for Humana, Inc. in downtown Louisville, Ky. Graves' firm was one of six finalists.

The Luzerne County Prison, Wilkes-Barre, Pa. designed by *The Grad Partnership*, Newark, NJ and *Carl Schmitt Associates*, Wilkes-Barre, Pa. was cited for special design features in the 1982 Justice Facility Exhibit sponsored by the AIA and the American Correctional Assn. The design was cited as "an excellent example of a contemporary, sensitive addition to an existing historic facility that solves the various new functional needs very well, while simultaneously enhancing the operation of the existing facility."

The Monmouth County Correctional Institution in Freehold, also designed by *The Grad Partnership*, was selected for inclusion in the exhibit.

The Whitney Museum of American Art in New York City has included the J.B. Speed Art Museum expansion, designed by *Geddes, Brecher, Qualls, Cunningham*, in its exhibition, "New American Art Museums." The show will run from June 24 through October 10.

Vito D. Spinella, AIA announced the formation of a partnership with *Peter P. Spinella, AIA*, under the name of *Spinella & Spinella* with offices in Clifton.

Pedro E. Campos, AIA announced his continuing practice of Architectural Consulting Services from his Studio Facilities at the Clinton Court Building in Newark.

Gerard F. Schaefer, AIA, of South Orange, has been elected President of the New Jersey Chapter, Construction Specifications Institute.

Scholarships

The Shore Chapter of the Society of Architects hosted the Scholarships Awards Night at the Hilton Hotel in Tinton Falls at which time the following scholarships were announced: Elizabeth Halvorsen — Architects' Wives Scholarship; John Lignos — Romeo Aybar Scholarship; Douglas Porcaro — Brown's Letters Scholarship; Alexander Antonelli — J.P. Edwards Scholarship donated by Newark/Suburban Chapter of NJSA; Steven Duffy — Frank Grad Memorial Scholarship; Diane Bradshaw — Hudson Blueprint Co. Scholarship; Richard Ballinger — Joseph Keiling Scholarship; William VanHorn — R.S. Knapp Co. Scholarship; Diana Coronato — Ray Knopf Memorial Scholarship; Bryan Sullivan — Lawrence Licht Memorial Scholarship; Beth Alson and Michael McLaughlin — Joseph L. Muscarelle Foundation Scholarships; John Genovese — N.J. State Concrete Products Assn. Scholarship; Ellen Dunham-Charles Porter Memorial Scholarship; Elizabeth Slotnick — Harry Ruhle Memorial Scholarship donated by Whittier Ruhle Co.



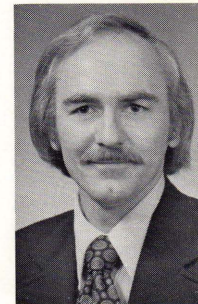
Michael Graves, FAIA



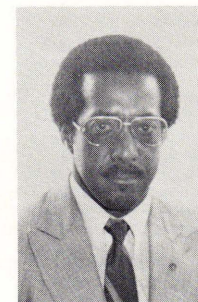
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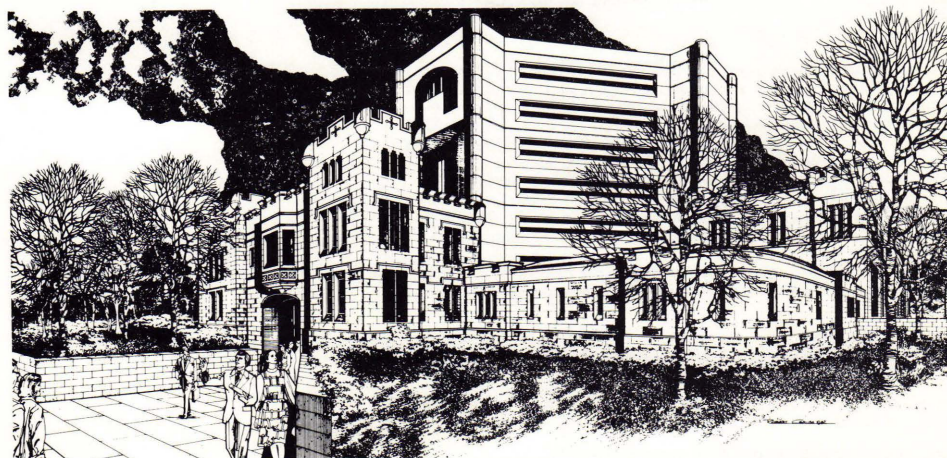
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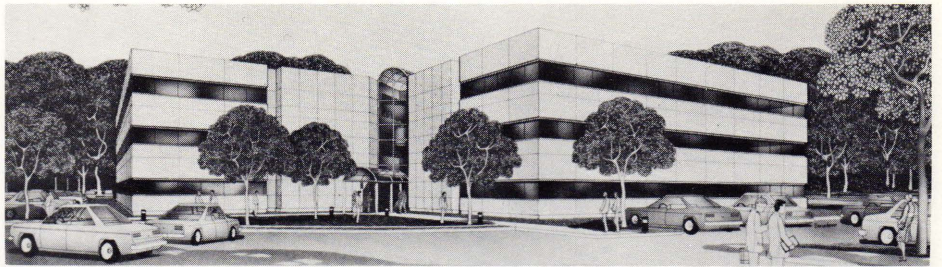
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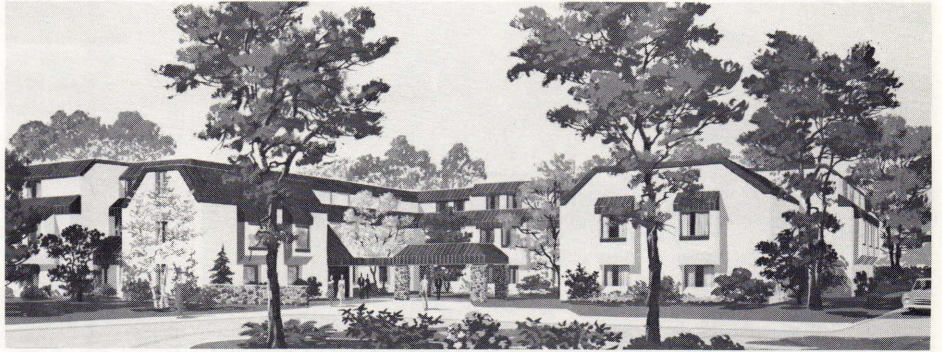
Luzerne County Prison, Wilkes Barre, PA. Architects: *The Grad Partnership*, Newark and *Carl Schmitt Associates*, Wilkes Barre, PA.

buildings in the news

Rothe Johnson Associates, of Iselin, designed this six-sided office building featuring a three-story, glass enclosed atrium lobby, as the flagship for the new World's Fair Center in Franklin Township.



Senior Citizen Housing, designed by The Gilchrist Partnership, is the first phase of the downtown redevelopment project in Glen Rock, N.J.



Windmill Pond, a ninety-six unit town-house project by Nadaskay-Kopelson Architects, PA, is now under construction in Morristown.



Gateway III, a new office tower in Newark, designed by The Grad Partnership will mark another step in the city's renewal and add 509,000 square feet of office space to its resources.

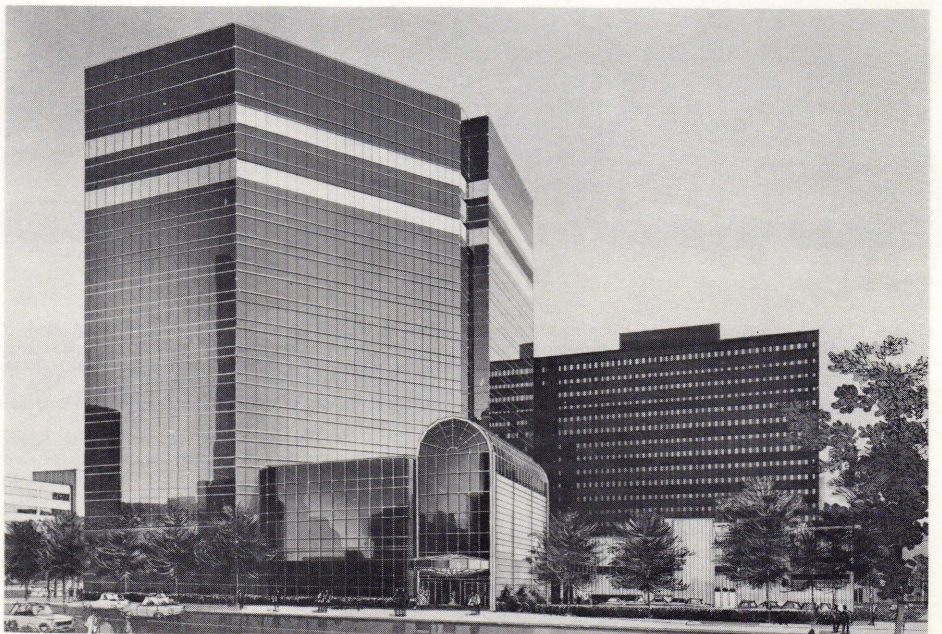




IMAGE 1



IMAGE 2

IMAGE 1: Thomas Jefferson designed his home, Monticello, as a foil to the Virginia landscape, creating a unity of opposites.

IMAGE 2: Built and natural forms often merge at the Stuart School, designed by Jean Labatut in association with Fulmer and Bowers: Architects at Princeton, N.J.

IMAGE 3: In Frank Lloyd Wright's Martin House in Buffalo, NY, building and landscape inflect to each other, indoor and outdoor space being organized as a formal geometric unity.

IMAGE 4: Arthur Drexler, Director, wrote on the occasion of the Museum of Modern Art's exhibition of the Liberty Park (NJ) Master Plan: "The architect has brought into equilibrium features derived from ecology, landscape design, building preservation and renewal, and large-scale architectural configurations." Liberty Park was master planned by a team led by Geddes Brecher Qualls Cunningham.

IMAGE 5: The grove of silver birches emphasizes the cloister-like atmosphere and peace of the space enclosed by the dining hall and office building designed by Geddes Brecher Qualls Cunningham for the Institute for Advanced Study, Princeton, NJ. Zion and Breen were the landscape architects.

IMAGE 6: At the Environmental and Health Science Laboratory, designed by Geddes Brecher Qualls Cunningham for Mobil Corporation in Hopewell, NJ, a double row of trees creates a link to the nearest building and is recalled within the Laboratory in the form of a colonnaded passage. Zion and Breen are the landscape architects.

As objects, buildings and landscapes are inseparable. Architects have designed both.

Landscape design is like building design in that it deals with spatial organization and human use. Both are concerned with the organization of movement — people, animals, vehicles — through space. They share twin roots; one root is necessity, with its corollaries of function and operation; the other is meaning, with its corollaries of symbol, reference, and association. In other words, the need for shelter and protection, and for a sense of place, gives rise to both landscape and building design. Our houses and gardens, our structures and greenparks, all serve our needs for a habitat and express the symbolic meaning of our lives.

Yet landscape design differs from building design because it makes use of a broader range of materials. The five essential elements of landscape design are:

earth — the land itself

sky — the atmosphere, clear or misty, sparkling or dense

water — running, still, and falling

plant materials — trees, bushes, ground cover

paving and walkway material — stone, brick, wood

The use of these elements, and particularly of plant materials, means that growth and change are central factors of landscape design, both perceptually and conceptually. The rise and fall of buildings, the changes and adaptations they undergo, are not the same as the growth and development of the landscape. Plants may be annual or perennial; trees may be deciduous or evergreen; seasons come and go; continuity and renewal occur over generations. In consequence, landscape design must take account of changes, and of the cycles of time.

Yet, as the works of Jefferson, Labatut, and Wright illustrated here show, some architects have designed both building and landscape, synthesizing the two to create a harmonious whole in one of three ways: the juxtaposition of building and landscape as a unity of opposites; seamless continuity between built and landscape forms; or a formal geometric unity in which indoor and outdoor space are organized together.

In spite of this potentially close interaction, architecture and landscape design have diverged as professions. Why?

The professional activity known as architecture used to include the design and construction of the landscape. Indeed, in many parts of the world it still does. But in America, beginning with Frederick Law Olmsted, who developed new models of practice for the landscape architect, the two forms of design began to diverge. Intensified professionalism emphasized the trend until today we find architects and landscape architects licensed separately.

As landscape architecture has moved away in education and professional organization from architecture proper, has the distinction between them held in prac-

tice? Not necessarily.

The respective roles of architect and landscape architect depend in part on the scale and scope of the work involved. Landscape projects extend from the small-scale garden or courtyard to the design of transportation corridors along freeways and rivers, or park systems for cities and regions. At the larger end of the scale, landscape architecture's independent role is clear; but at the smaller scale, that of the street or building, architecture and landscape design still overlap considerably, and sometimes they coincide.

The immediate extension of the building is the responsibility of the architect, but it varies in scope. It can be limited to five feet outside the walls or it can extend to the boundaries of construction. Ideally, the architect is also responsible for setting the building in the landscape. This may involve the selection, analysis, and evaluation of the site and ecological and environmental impact studies made to assess the effects of construction. In addition, the architect may be responsible for planning and designing open space for roads, service areas, parking, and related uses such as recreation. In other words, the architect can be found designing buildings and open spaces as two parts of a unity.

In assessing the relationship between landscape architecture and architecture itself, given the overlap and divergence in their materials, methods, and roles, two things should be remembered. First, these two are not the only disciplines concerned in development as we know it today. As environmental issues have become part of the legal process of planning, zoning, and developer approval, civil engineers, specialists in soils and foundations, and natural and physical scientists have been drawn in, too. The goal in the creation of landscape and building design is, therefore, the integration of the knowledge not only of architects and landscape architects but also of all these technical specialists.

Second, the architect can serve either as a *team leader*, directing and integrating the work of the specialists, or as a *team member*. Both roles are of equal importance, socially and professionally. What really matters is the quality of the ideas and knowledge brought together in the spatial design.

After all, the position of the landscape architect and architect relative to each other is, in the end, less important than their work together. When both have left the scene, the building and landscape remain, inseparable.

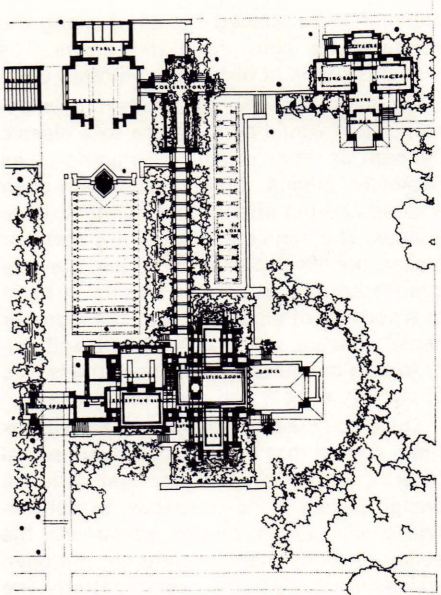


IMAGE 3

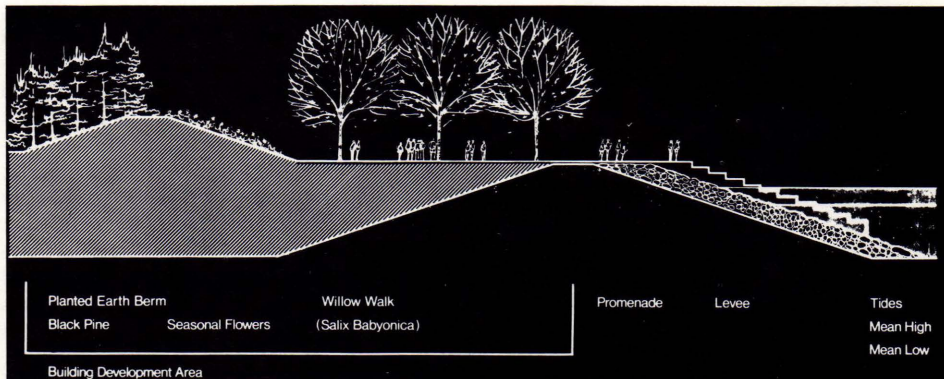
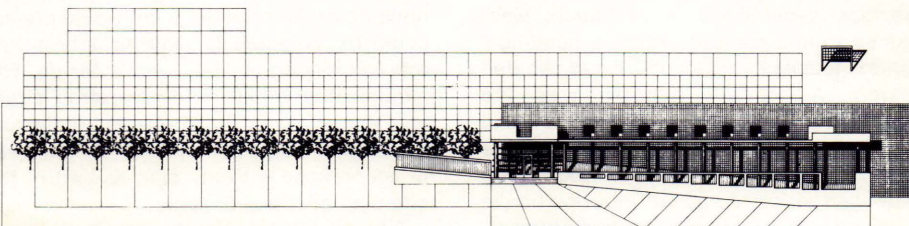


IMAGE 4



IMAGE 5

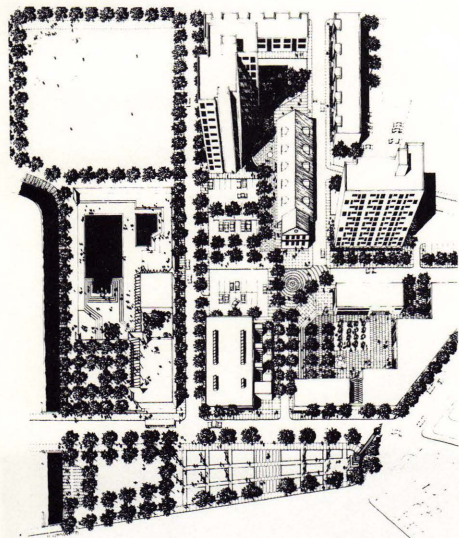
IMAGE 6



Editor's Note: Robert Geddes, FAIA, often writes and lectures on the correlation between landscape and buildings. He was recently honored by the New Jersey Society of Architects, marking his 17 years as Dean of Princeton University's School of Architecture. Mr. Geddes is a founding partner of Geddes Brecher Qualls Cunningham, a 90-person firm that has won many NJSA design awards. GBQC received the AIA's Architectural Firm Award in 1979.

urban landscaping

by John P. Clarke, AIA, AICP



With the advent of the automobile as the dominate means of transportation and the general acceptance of the modern movement in architecture, we as a society, have found it increasingly difficult to create aesthetically pleasing urban and suburban developments. Our modern developments appear disjointed and fragmented. Contemporary groups of buildings lack the cohesion and continuity of form, scale, material and color which previous periods of architecture were able to achieve. This problem is compounded by our general insensitivity to the issues of urban landscape. If we had more appreciation of the benefits that can be derived from comprehensive landscape concepts, we would be able to heal many of the visual scars we inflict on our urban and suburban communities.

The typical building of our time is conceived of as an individual object, set on a separate lot, unrelated to any nearby development. Architects concentrate on expressing their personal design concepts and those of their clients. Virtually no consideration is given to how our modern buildings will look in context with surrounding structures.

This has not always been the case. Previous generations of architects were trained to analyze and exploit a building's context to make a richer, more complicated design. A primary concern was the building's relationship to the street and therefore to other buildings along the street. Our streets have become wide open, undefined strips of asphalt that don't have a sense of continuity or containment.

Buildings are spaced far apart along the roadways to allow for parking lots. The visual result is at best dull and often ugly.

An alternative to the present development style would be to return to a classic concept of urban design. Designing cities basically means designing public open spaces and the streets that connect these spaces. The open spaces, be they parks or plazas, are like outdoor rooms, and they are connected by corridors i.e. streets. A room or a corridor of a building requires a proper sense of scale, proportion, texture and color to be a beautiful space. The same is true of our city streets and outdoor spaces.

Once you create a system of spatially defined streets that have a three-dimensional form, it is much easier to deal with the design issues of open spaces. Street corridors will define blocks which are the solids of a city plan. In contrast, the open spaces are voids in the overall pattern. The street corridors will be used to give an edge, a boundary to the open spaces.

Typically today, we do not have continuous rows of building facades which will give a street a spatial definition. Our buildings are set back from the road and are relatively low compared to the street width. This all leads to the importance of urban landscape elements and the overriding significance of street trees. Basically, the only method we have for establishing a visually coherent system of streets is to line our roadways with rows of closely-planted trees. The trunks and branches of the trees provide a type of colonnade which becomes a container for the street. Properly selected, these trees will give the otherwise disorganized street a condition of order and visually unite the development along the route. The concept is to substitute rows of trees for the building facades which once lined our streets.

Recall the wonderful impression gained by traveling down a street lined with mature trees. The street has a delightful quality of enclosure. The leaves and branches make exquisite patterns with the sunlight. Noise is muffled, summer temperatures are lowered, the air is more moist. The "hodgepodge" of signs, buildings, parking lots is masked behind the trees. Street trees enhance both buildings with strong architectural character and those devoid of any design character.

We need to be developing comprehensive landscape design for our urban and suburban areas. These plans should be conceived as three-dimensional urban designs which will give physical form to our primary public spaces — streets. This type of civic design is beyond the scope of any single building project, yet each individual project could be expected to play its appropriate role in carrying out the overall design. The municipality would have an overall street landscaping plan prepared, and individual developers would be required to plant trees in accordance with the plan as part of the site plan approval process.

Not all streets are the same. Within a

locale, different streets have different functions, i.e. commercial, residential, industrial. Streets have different traffic volumes and characteristics. Some streets are conducive to pedestrian movement, others are not. The different characteristics of a municipality's streets should be taken into consideration in the development of the overall plan. Rows of larger trees, with branches that grow towards the ground, might be appropriate along a street that has heavy vehicular traffic and no pedestrian movement. Pedestrian streets should be lined with trees whose branches grow higher not impeding foot traffic.

Color and texture are also important considerations. Certain streets can be lined with a tree type that flowers during specific periods of the year. This type of planting can give special color and identity to the street. It is important that the trees be planted along the street in significant numbers to identify these trees with the street and not as small groups of plantings unrelated to the street idea.

This urban scale concept of landscaping design would end the salad bowl approach to landscape design currently practiced by typical local planning boards. When a developer and architect present a project for site plan review, they are often requested to provide a peculiar assortment of small bushes and shrubs clustered tightly around the building. In addition, they will most likely be asked to provide a variety of "buffer" plantings in the form of bushes or hedges between their property and the adjoining development. The result is a further separation of each building from the next, breaking down the visual continuity of the street. The plant types generally requested by local planning boards are too small in scale. They are sized for residential backyards, and they have little to do with the scale of a street.

Many of the streets in our older municipalities were once lined with fine rows of trees. Due to neglect and old age, these trees are gone leaving the streets with a raw, dismal appearance. Public officials in older urbanized areas should institute programs which, over a ten-year period, would line every street in the municipality. This effort should not be viewed as a frivolous beautification program. My experience in city redevelopment programs has indicated that installing street trees in a neighborhood is a most effective method for preserving and upgrading housing values and, subsequently, a way of preserving the local real estate tax base.

Street trees planted in consistent rows sounds like such an obvious concept that it is ignored in our development planning. The fact is our urban areas would be far more delightful if we would take steps to create a comprehensive system of landscaped streets.

Editor's Note: Mr. Clarke is a partner in Clarke & Caton, a planning/urban design/architectural firm located in Trenton. He is also an associate adjunct professor in the Urban Design Program at Columbia University.

the garden of energy

by Jacques A. Duvoisin, AIA

The oil embargo of 1973 created global economic strains from which the world has yet to recover. This highly negative situation, however, produced a very positive change in attitude — a return to the fundamentals of nature. In grand terms, a rediscovery of the finite world.

During the years of abundance (cheap energy) we, especially we here in the United States, lived in an artificial world of unlimited resources, or so we thought.

Instead of visualizing ourselves as a part of nature, our attitude was one of separateness and ability to conquer nature. She was there for us to use and waste as we pleased. We felt that we could mold her to our grandiose plans. Indeed, we tried to redo the landscape — and this has become an all too familiar litany.

The landscape, however, is the environment in which we live and we are becoming reacquainted. We are rediscovering our place in nature which the ancients knew were harmonized with so well.

The sun is part of that landscape and it is our benefactor. Its gift of energy is becoming more fully appreciated and accepted. We cannot ignore it any longer. Indeed, all of the forces of nature must be clearly understood and it is we who must adapt.

In more literal terms, the landscape in architecture can no longer be bulldozed, reformed and replanted to suit our structures and the architect can no longer just design pretty gardens.

It is our structures that must be designed as extensions of the landscape and all the planting, site work and structures must work in unison to realize total energy-efficiency and to ensure that neighboring sites are not adversely affected.*

The role of the architect is becoming increasingly important in this regard. A dwelling, for instance, should no longer be built from stock plans. Each site has its own characteristics which demand special attention. In other words, the lay of the land, its soils and vegetation should dictate the design of the structure.

A great irony is that these are principles which we all knew about and applied to various degrees but never to the point that the socio-economic situation now dictates.

The natural and man-made garden should be carefully planned from initial

site selection to the last brick. In the client's interest, the architect should attempt to become involved with the selection process. An urban or rural site, for megastructure or dwelling, should be carefully screened not only for economic, business and demographic purposes, but also for its energy potential which, in the long run, affects the economic viability of the structures placed upon it. The architect's expertise in this area can produce savings which the untrained buyer may not initially realize.

There are other aspects of a site which also affect the viability of a structure and its habitants. These lie in the realm of environmental psychology, i.e. a site that is warmed by the sun and properly shaded when necessary; that is protected from cold winter winds in the winter and cooled by summer breezes. These provide better comfort and induce higher productivity.

The ideal site in this part of the world is one which generally slopes in a southerly direction (preferably SSW), has evergreen trees in the northern reaches to shield the winter winds, tall deciduous trees elsewhere to provide shading in the summer and solar access in the winter when the leaves are gone. The presence of a pond can provide general ambient temperature stabilization as well as cooling for heat exchangers.

The nature of the soils are important in determining thermal diffusivity and capacity for in-ground spaces. Earth construction is further affected by the drainage characteristics of the soils and the relative design loads on foundation walls. Some soils today contain industrial contaminants and ecological waste as well.

Very few sites, if any, can meet all of the foregoing and other criteria. The architect must, therefore, weigh the negative characteristics against the positive. That evaluation plays a role in the site selection process.

Having obtained a site, it is then up to the architect, to design a structure that is by itself energy-efficient. But the design of that structure is also influenced by the natural and man-made environment which the architect can use to advantage, coordinating its solar exposure with vegetation, berms, ponds, etc. as required to render the entire project totally energy-efficient. The structure in effect is a manifestation of the garden.

**Solar access is a relatively new concept in zoning which is gaining attention. In brief it ensures solar access to a neighboring property by preventing a developer from shadowing a neighbor with improper construction and landscaping.*

Editor's Note: Mr. Duvoisin is a partner of the Weaver Partnership, Morristown, and a member of the Editorial Board of ANJ.

"Water, water, everywhere,
but not a drop to drink,"
said Coleridge a while ago,
it really makes you think:

Water is the stuff of life
All things need it to grow
Its form is always useful
Whether liquid, steam, or snow.

In spite of our efforts
We're really afraid
When into its realm as
Designers we wade.

What's needed, quite simply is
just common sense if
you tend to want to keep from
seeming defensive.

Let's look at examples
that lateral thought
in our land and others
in structures has wrought.

A bridge spans a river
It's flatly asserted
The aqueducts' pattern
however's inverted.

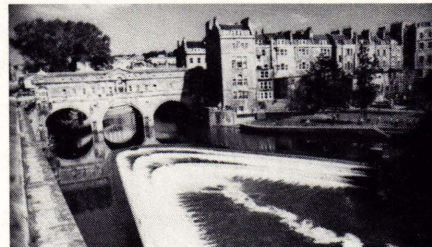
When it is discovered
there's no terra firm
The cry "streets for people"
will make us all squirm.

In Venice (as elsewhere)
this expression's banal
but street life revolves there
around the canal.

Though water and land
are clearly contiguous
The figure and ground
are ever ambiguous.

Water has aspects
from which to select
'can be angry or brooding
or used to reflect.

The rivers are solid
where climates are cold
and when the bed steepens
they creep and then fold.



Wearing and tearing
the surface of many a
rock leaving scars after
several millenia.

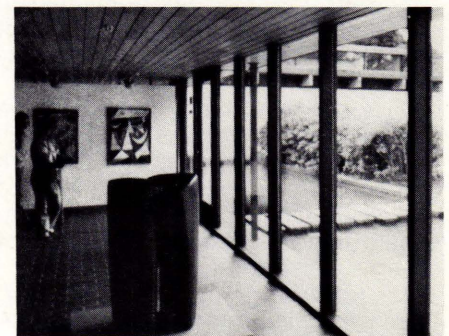
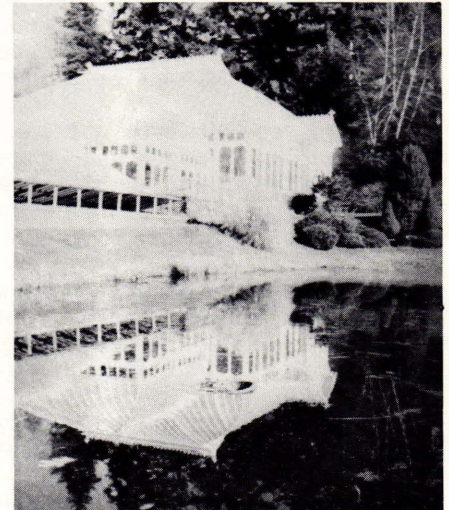
With the pull of the earth
and of wind, it behooves
the architects to
keep in mind water moves.

So if shorelines recede
don't be miffed
It's a littoral move
(get my drift?)

With care, you'll become
a sort of a druid
Who worships this weird
and wonderful fluid.

Don't ever, when planting
neglect H₂O
Just note its direction
and "go with the flow."

REFLECTIONS



by Eli Goldstein

Editor's Note: Eli Goldstein, (photographer and author), a recent graduate of MIT, specializes in the architecture of cold climates. His work has taken him to the Alpine regions both here and abroad and has involved him in the design of several mountainside developments, including the winning scheme in the Eagle Ridge National Design Competition, (Steamboat Springs, Colorado, 1981).



the architect and the landscape street furniture, built-ins

by Howard N. Horii, AIA

Architects are trained to turn words and thoughts into visual, three-dimensional images. If the title of this article were to be taken literally, then the image would be one of a street with furniture built into it, with no surface large enough for vehicular traffic.

How nice it would be if such an image was the one we could use when we think about our use of the streets — an image without automobiles.

Over the past decade, we have been subjected to embarrassing and frustrating instances of gasoline shortages and subsequent high costs. Our dependency upon the use of automobiles may have prevented our foreseeing its eventual side effects — the possibility of fewer, smaller and less-pollutant cars.

Some of us rejoiced at that prospect, in that it would return more of the street to pedestrians and an ultimate easier flow of public transportation.

However, this is a simplistic hope. We know the tremendous impact the automobile and its myriad of support industries have had on the economic stability of our nation. Even though automobiles are changing, they're not going away.

Accordingly, an image of a street with furniture cannot avoid the economic and social impact of the automobile. Shapers of the street environment *must* consider the movement and parking of automobiles as well as pedestrian, public transit, and service vehicle circulation. These several different needs in the street environment would require solutions that safely separate the functional differences while providing easy access to businesses and services.

Historically, there have been attempts to humanize streets by closing them off to vehicular traffic (except for emergency and service vehicles), and devoting them strictly to pedestrian movement and rest areas with street furniture. Some of these attempts at taking the control of the streets away from the highway and street departments and giving them to other agencies have been successful, others have not.

It appears that a lesson is to be learned from the failures. Hoping for success does not assure use of streets and street furniture, despite the quality of design. There are too many economic and social factors that make failure or success a reality. Pedestrian access and uniquely designed street furniture alone cannot guarantee success. Healthy, flourishing businesses on a street lead to social interaction and well-being among the people using that street. Examples of this kind of interaction, while not quite fitting the description of built-in furniture, are the numerous street fairs which have become so popular in all parts of our country.

It would seem that the vast use of real estate taken up by streets in these times of enormous land costs has stimulated a greater and more imaginative use (in most cases) of this public property space reservoir.

Then again, city residential areas like Bedford-Stuyvesant in Brooklyn have created a different kind of street fabric. Here, a street was converted, not into a fair, but into an outdoor community center. This street does not prohibit autos completely but controls their movement into specified areas. There are play areas for the young and quiet areas for the elderly, each with appropriate street furniture. The young furniture is designed as play sculptures and the elderly furniture provides seating and tables for visiting and for just sitting. The scale of the areas was designed to be compatible with the predominantly four-story residential buildings flanking the streets. Many of the buildings have front stoops which in themselves are used as street furniture for seating. The texture of the walking surface is distinctive in size and scale to differentiate from the driving surfaces. The tactile difference establishes territory. A key factor is street lighting designed to a scale keeping with the total fabric and providing

safety. The design was executed in 1969 by I.M. Pei and Partners with M. Paul Friedberg and Associates.

Street furniture such as described above is permanent and built-in for a special social interaction of members of a particular super-block.

Another example of street furniture built-in for a special use is the area on upper Broadway in New York City above 90th Street where a mid-island divides uptown and downtown traffic. This median strip is a planted green strip protected by fencing. At the ends of each planted area where crosstown streets intersect Broadway are built-in benches. For a long period of time, these benches served a very special social function, where the elderly gathered, sat and socialized. Whenever weather permitted, these benches were fully occupied. As the social fabric of that area of the city changed the use of the built-in furniture changed too. The elderly were gone.

What can we do about built-in street furniture that has outlasted a very special social use? What is the flexibility needed in built-ins or in the social conditions of the people who use the street for more than driving cars or taking the local transit? That is certainly a challenge for architects.

Other types of built-in street furniture can take on a more commercial purpose while serving a public need. Specifically, bus shelters can fall into this category. Bus shelters take on many shapes and are constructed of various materials. Because of their special use, users are a captive audience for advertising. This is true whether the bus stop has a weather shelter or is only a bench on which advertising is inscribed.

Structure of street furniture is as varied as the imagination of designers can conjure up.

Primary consideration of the design of street furniture is permanence and ease of maintenance. Bulk and mass are not as critical in street furniture as moveable furniture because their weight can be factors to be considered.

As mentioned earlier, built-in street furniture can be in the form of steps or low walls. Often we see the use of these for sitting. This can be by design or by convenience due to the lack of other facilities. Low wall seating often takes the form of separation of pedestrian surfaces from planted green spaces. This can be seen in the many cities and in through-block pedestrian walkways. In addition to separating pedestrian and green spaces, low wall seating often takes the form of containment of water and fountains. These built-in walls provide the added amenity of water's movement and sound. We are beginning to see streets separated from automobiles by their actual location within structures such as suburban shopping malls and in-city spaces like the lower levels of the Citicorp building.

Other forms of street furniture which are built-in and those which are not, but are necessary appointments to the urban landscape, need design attention. Necessary from sanitary, safety and convenience points of view are street lighting, telephone booths, mail boxes, trash baskets, garbage cans, street signs and signals. As we pay attention to building interior appointments we should also recognize the need for better design of exterior appointments. They too affect us visually.

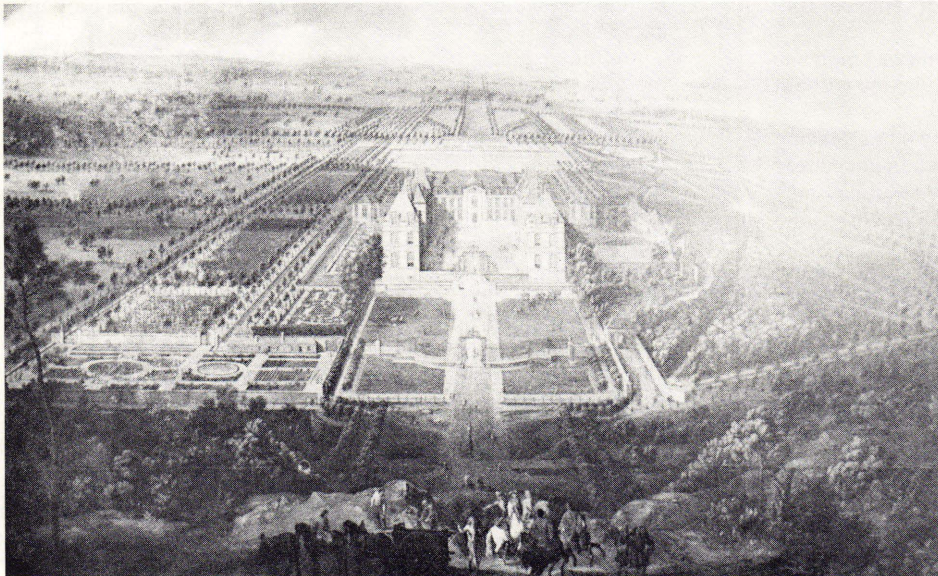
Designers are recognizing the need for separating the functions now located in our streets. All of those cars, buses, bicycles, motorcycles, emergency and service vehicles and pedestrians with their street furniture can be separated safely in a thriving business area.

We only have to look at examples such as the Cannery Area in San Francisco, the New Baltimore Water Front and the Faneuil Hall area of Boston. In these examples, all of the necessary appointments including signs are visually effective and the "new" street furniture is built-in to a scale conscious whole. These places are magnets for social interaction of a spirited nature.

Editor's Note: Mr. Horii is a partner of The Grad Partnership, Newark.

pontchartrain: le nostre's last garden

by Philetus H. Holt, III, AIA



Pontchartrain — Painting 1.

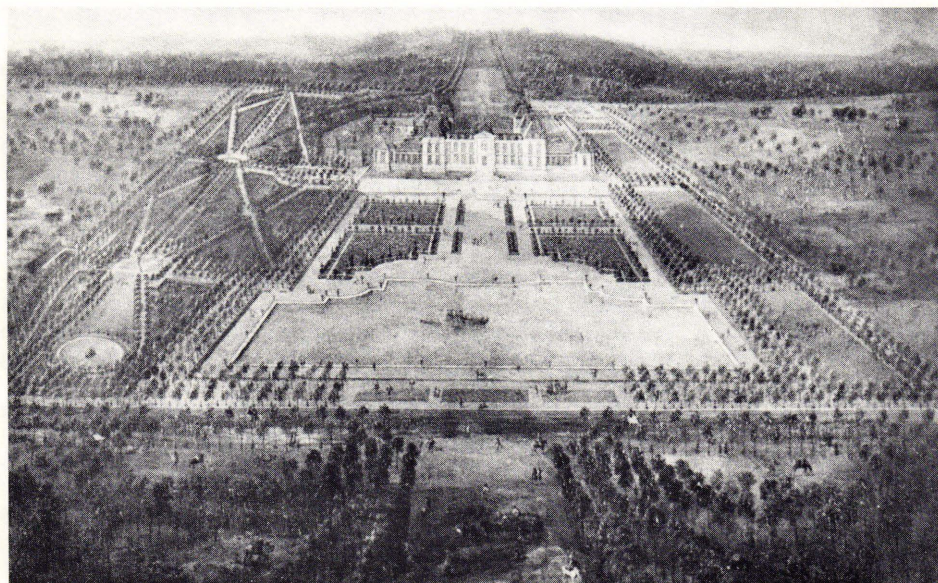


Vaux le Vicomte Entrance Gates.

Pontchartrain — Painting 2, garden side.



Pontchartrain — Painting 1 detail, le Nostre is in center, without hat.



André le Nostre (1613 — 1700), gardener to Louis XIV and France's greatest landscape architect, used the known devices of perspective distortion and optical illusion to create gardens which are superb examples of the Baroque art of "bending the truth." Created with intelligence, skill and humor, the carefully calculated interrelation of land, landscape and building made great compositions that appear limitless and filled with surprising visual effects. The scale on which these gardens were designed is still astonishing. Versailles, for instance, is 2½ times the size of Central Park, and the view from the west terrace seems to extend to infinity.

Several years ago I went to France with Hamilton Hazlehurst, Chairman of the Department of Fine Arts of Vanderbilt University and a personal friend, to gather on-site information for a series of illustrations for the book he was writing on le Nostre. Ham had long studied the development of 16th and 17th century French landscape, but his descriptions of the optical techniques used by le Nostre had left me somewhat skeptical. It was not until our first visit to Sceaux that I began to see and understand the richness and complexity of their design. From then on, with camera, tape measure, pocket transit and copies of old plans, we re-examined the 12 major surviving le Nostre gardens, discovering many examples of the "bending of the truth."

The garden of Pontchartrain was designed for Louis Phélypeaux, the Finance Minister of France, when le Nostre was in his 80's. Today it is still privately owned and little known. Although on a smaller scale than some others, it can serve as an example of le Nostre's genius. For me, the discoveries made there stand out as one of the high points of our explorations. We went to Pontchartrain, located 20 kilometers west of Versailles, primarily to see two early 18th century paintings of the le Nostre gardens. We had heard that later changes, turning part of the garden into an "English" landscape, combined with years of neglect, had left little of the original work to be seen.

At a place where a large cross once stood (and still called on the Michelin maps the Carrefour de la Grande Croix,) the composition begins. There, the road (now Route Nationale No. 12) begins a long straight descent toward the distant chateau, exactly as le Nostre designed it. (PAINTING 1) The double entrance gates are gone, so we could only imagine the dynamic interaction between ironwork and building that can still be seen at Vaux-le-Vicomte. (PHOTO)

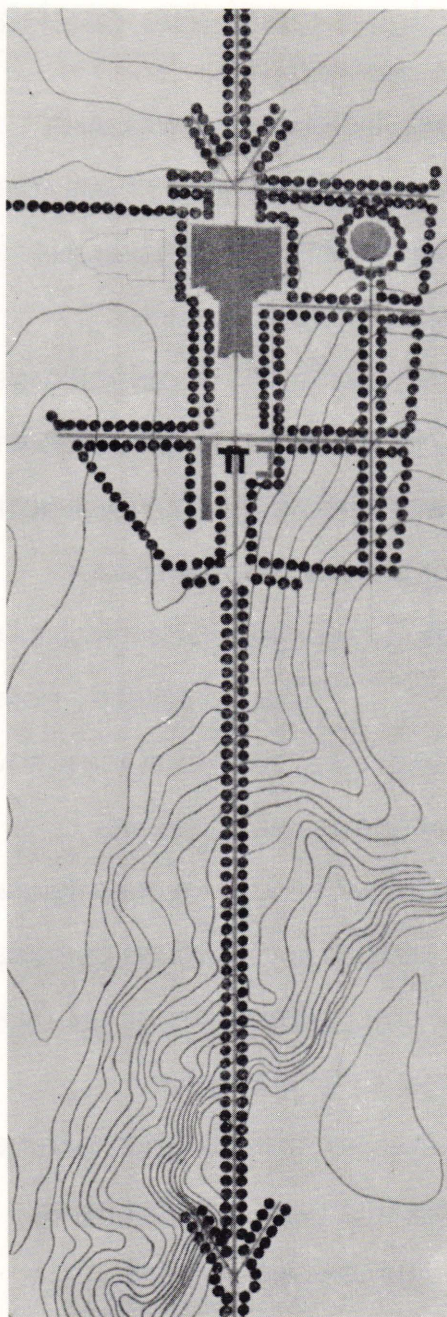
The paintings, however, were there, hanging in a main salon and showing the le Nostre gardens at their height. (PAINTING 2) A comparison of the pictures with old plans and a modern aerial photograph verified their accurate portrayal of many parts of the design. We even discovered, in the central equestrian group of painting 1, an obvious portrait of le Nostre viewing the gardens with his client. As we studied them further, we became aware of a distortion of

perspective which greatly foreshortened the narrow eastern arm of the main pièce d'eau. While photographing the paintings, we could see out of the salon windows that some of the original garden elements were still in place. Water still filled the basin; one of a pair of sphinxes still stood on the terrace; and a bench still sat on the western edge of the pièce d'eau.

Lured into the gardens by these glimpses which suggested that more remained than originally thought, we made our way through the cows grazing on what once were embroidered parterres. At the east edge of the main pièce d'eau, looking back at the château, we could imagine that there once existed a broad, harmonious, horizontal composition of parterres, trees and buildings. (SKETCH 1) Also at that point we realized that the basin appeared wider than when first seen from the chateau, its exact shape still hidden by trees. To explore further, we decided to walk to the far side of the basin which did not seem far. Actually, it is over half a mile but appears closer because the rising slope of the far allée foreshortens the perceived distance. It is a subtle distortion of perspective, carefully engineered by le Nostre. It was a relief to sit and rest. Right there, sitting on the bench so carefully placed right on axis, and clearly shown in the paintings as the only resting place available, we found the focal point of le Nostre's composition. We realized that the "incorrect" perspective of the paintings, if not taken literally, was an accurate representation of the way the water basin appears from the ground. More exciting was the understanding that the distant approach road and la Grande Croix would have formed a cross-topped spire exactly fitting onto the 3 center pavillions of the château — the whole scene reflected in the apparently limitless width of the water basin. (SKETCH 2)

I'm sure that others would have climbed the allée beyond, just as we did, to get the view from the top. Le Nostre, by his placement of bridges, steps and paths, designed a circuitous route to the summit. It is off-axis until more than halfway up the tapis vert. At the top, the broad flat composition shown in sketch 1 would have changed to a strongly vertical one with a now much taller spire dominating the building. (SKETCH 3) Finally, as we walked down the slope of the allée, the full magic of le Nostre's 3½ kilometer composition was revealed. The cross-topped spire would have slowly lowered and the moving, changing relationships of château, water, trees, and sky would have formed a kind of motion picture that was, and to a great extent still is, truly a tour de force of Baroque design. As we had found in other gardens, le Nostre had reserved the best for those willing to walk to the far end.

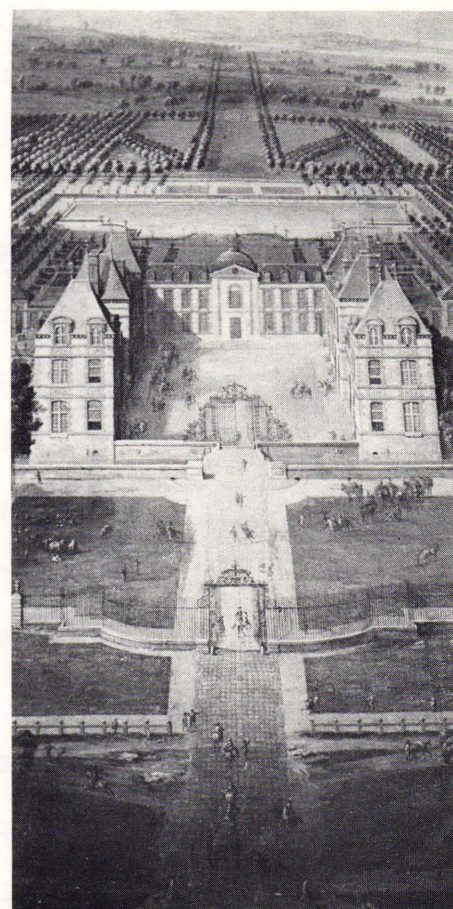
The design of Pontchartrain proves that, despite his age, le Nostre had not lost his touch. An amusing glimpse of the man himself is revealed in a letter he wrote in 1695 to Phélypeaux about the age-old problem of overdue payment for services.



Plan of Pontchartrain — contour internal 5 meters.

"Monseigneur, you have been so good as to accept the general plan of Pontchartrain which you have found well enough executed, and you have evinced satisfaction with it. I have employed many strokes of the pen; I have made several sketches in different styles; I ask of you only one by your beautiful white hand, with all revolutions and contours which are necessary in order to assure the payment of the three thousand livres that it please the king to give me every year in recognition of the service that I render..."

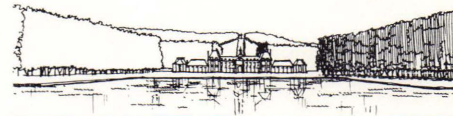
Professor Hazlehurst's book, "Gardens of Illusion, The Genius of Andre le Nostre," was published by Vanderbilt University Press in 1981. In the spring of 1982, it was awarded the ALICE DAVIS HITCHCOCK BOOK AWARD of the Society of Architectural Historians, given for "the most distinguished work of scholarship in the



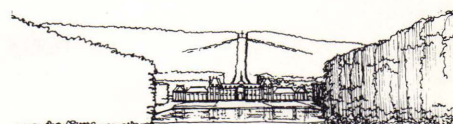
Pontchartrain — Painting 1, detail, entrance gates.



Pontchartrain — Sketch 1, view from east edge of pièce d'eau.



Pontchartrain — Sketch 2, view from bench.



Pontchartrain — Sketch 3, view from top of allée.

history of architecture published by a North American scholar during the year 1981.

The drawings and plans illustrating Pontchartrain first appeared in *Gardens of Illusion: The Genius of Andre Le Nostre* by F. Hamilton Hazlehurst and are used with permission of the author and the Vanderbilt University Press.

Editor's Note: Photos and Drawings are by Mr. Holt, a Partner of Holt & Morgan, Princeton.

the plant and the architect

by D. Levon Gedickian, AIA

HI MR. ARCHITECT IT WAS QUIET
YES, ITS ME THEY CAME AGAIN
I'VE BEEN HIDING, BUT AND DUG AND FILLED
NOW I'M COMING OUT. BUILT
I DON'T LOOK VERY WELL BUT, AGAIN YOU CAME
I'M A COMMON TYPE AND POINTED & TALKED
STARTED OVER TWO YEARS AGO YOU NEVER NOTICED
WAS SO NICE HERE, QUIET I'M LONELY
FRIENDS ALL AROUND NOW IT'S QUIET AGAIN
CALM FINISHED & GONE
THEN ONE DAY I SAW YOU MY PLACE IS COVERED
YOU DIDN'T NOTICE ME ITS DARK
I TRIED TO ATTRACT YOU NO ONE AROUND
YOU DIDN'T LOOK MY WAY YOU'VE COME AGAIN
BUSY WITH OTHERS POINTING & TALKING
POINTING & TALKING HEY!
YOU NEVER NOTICED YOU'RE POINTING AT ME
THEN THEY CAME WHO'S THAT?
AND SCRAPED WITH YOU
AND CLEARED NEW FRIENDS, DIFFERENT
TOOK MY FRIENDS AWAY SO MANY
AND MY FAMILY BEAUTIFUL
I HID AROUND ME
NOBODY NOTICED YOU DID SEE ME
THEN I SAW YOU AGAIN NOTICED
BUT YOU DIDN'T SEE YOU CARE!
I EVEN WAVED I LOVE YOU!!!!!!!!!!
YOU WERE POINTING & TALKING

Editor's Note: Mr. Gedickian is a member of The Editorial Board of ANJ and has a private practice in Englewood.

FLOOR AND WALL FINISHES

by Michael Greenberg, AIA

Definitions sometimes set the tone of discussion, and the more complex the subject matter, the more difficult it is to arrive at a definition. So much can be said about floor and wall finishes that entire texts have been prepared on the subject. Technically, there are many accepted definitions, but to put it simply, the "finish" is what you see — the final wearing or decorative surface which can be either applied to or an integral part of the structural component itself.

This article will deal only with the more common, general-used floor finishes, and also discusses some of the more important considerations affecting their selection. Subsequent articles will discuss general type wall finishes and finishes for special use and utility, such as laboratory floors and walls, and special non-skid or highly durable surfaces.

Concrete, wood, steel plate, and glass block sometimes perform the dual function of both structural and finish components. Applied finishes vary from concrete hardeners, paints, synthetic monolithic epoxy-type finishes ranging from 1/8 to 1/2 inches thick, tiles, terrazzo, stone, resilient sheet and tiles, and carpeting. Considerations for Architects, Owners, Contractors, and Maintenance people are esthetics, cost, installation methods, intended use, durability and maintenance. Proper selection will consider all of these human and technical factors.

Concrete floors as a final wearing surface have a variety of commonly used finishes. This can range from light broom finishes, exposed aggregate finishes, wood float finishes and steel-trowelled finishes. In general, the more texture achieved on the surface the more non-slip is its function. Broom finishes are commonly used in pedestrian traffic areas and ramps. Aggregate finishes are commonly used for decorative walking surfaces. Wood float and steel-trowelled finishes will generally occur under applied finishes. In the case of steel-trowelled finishes, however, they may also be left exposed and may receive a very thin clear coating commonly referred to as "hardener" or "dust-proofing." Utility areas that are not usually visible to the public may receive this type of finish. Another type of finish applied to a hard trowelled concrete surface would be paint, commonly referred to as "deck paint." This is merely another form of dustproofing where the color selection may be a factor. It is commonly used in areas that receive nothing but very light traffic (special types of paint, again, will be discussed in a subsequent article).

Ceramic tiles come in various shapes and sizes and are generally installed in areas where water and moisture are present and sanitary conditions are required. They

generally provide a hard, durable surface and are easily maintained. Floors in most types of commercial installations are usually finished with the unglazed ceramic-mosaic type while residential interiors may be finished with glazed tiles. Quarry tile would also be installed in areas having these same considerations. Although the most common reference is red squares in commercial kitchens, in recent years quarry tile (both domestic and foreign) has been applied to more decorative areas such as lobbies, corridors and offices. Grout, that mortar-like material that fills the joints between the tiles is almost as important as the type of tile itself. In commercial installations such as kitchens and serving areas, the grouts are specially formulated to resist the chemical attacks from both the uses and maintenance of the surface. Ordinary grout is generally used in commercial areas requiring a lesser degree of sanitary compliance, such as toilets and other tiled floor areas in office buildings, and in residential use. Grout is also available in colors containing non-fading pigments and is sometimes color-coordinated to match or approximate the color of the tile. One developer of office buildings I know is adamant about only using grey colored grout on toilet floors in his buildings in lieu of the more commonly selected white color. He maintains that grout turns grey in some areas only and in a short time the floor is "assumed" to be dirty in those areas — so he starts off with a uniform color and receives much less subsequent complaints from his tenants about dirty floors.

Terrazzo is available in either conventional (small aggregates) or venetian (some very large pieces of aggregates) patterns. Terrazzo comes in various designs and requires various depths of final finish. It can be as thin as 1/8" or as thick as 3" with the surface appearing almost identical. In general, areas that will receive very heavy wear, such as building lobbies, may receive a terrazzo finish. Terrazzo is easily maintained and quite durable. Periodic application of the clear synthetic sealer coats which acts to prevent dusting and afford easy maintenance is usually all that is required to extend appearance and wear.

Stone for flooring is usually in the form of granite, marble (including travertine) and slate. Unique to stone, however, is that as a general category, it probably has the most variables affecting selection. A particular type of stone may look fine but may not wear well because it is too soft. A large commercial project done several years ago had a nicely detailed marble floor composed of green and white squares set in a checkerboard pattern. Because one color was much softer, it began to wear much quicker and the entire floor wore unevenly — eventually leading to replacement. Porosity, which will affect the degree of dusting and stain resistance, is another important factor to consider. The same type of stone may be available with various finishes, ranging from very smooth (polish-

ed) to a "matte" (honed or sawn) to a rough (thermal or natural-clef) category. A bright, slick surface may look good in a small executive area, but is a hazard in a heavily trafficked public lobby. And conversely, a rough textured thermal finish may look good on a wall but will be very uncomfortable underfoot and will destroy most commonly used maintenance equipment. In some cases, a natural-clef slate is used when the slate is in smaller sections resulting in a less severe clef. Matte finishes are generally selected for floor stone, but most of the esthetic qualities are changed when owners and maintenance people apply a clear sealer for protection and ease of maintenance. Size and thickness of the stone sections affect cost, but in more ways than most realize. Aside from these obvious quantity differentials, trade practices also affect cost. Large sections require more handling than smaller ones which approach the size and thickness of tiles. In fact, tile setters and not stone masons will set stone sections that are less than a certain face dimension and thickness. Therefore, wage rate and setting quantity differentials will also affect overall project cost.

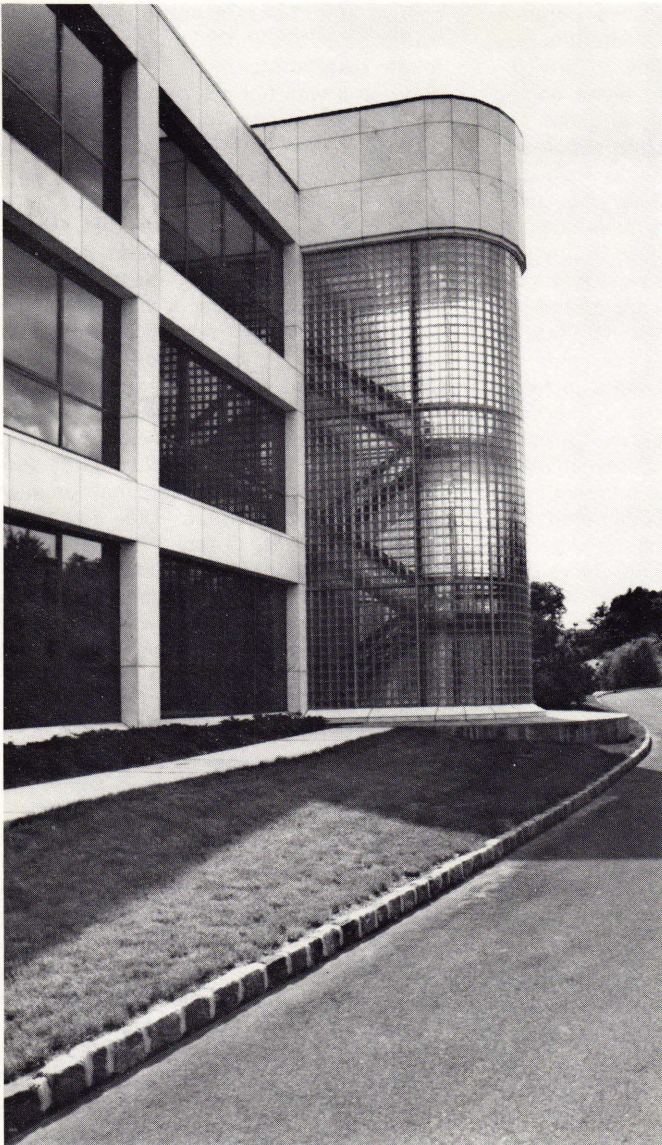
Brick as a floor material generally has less size differentials than stone, but most of the stone discussion also applies here, including thicknesses with brick layers and tile setters — the two trades involved.

Another type of floor finish is resilient tile and resilient sheet flooring. This can vary from what referred to as "vinyl asbestos tile," to sheet vinyl and rubber tiles and sheets. This type of flooring is generally used where resiliency is required, and where there will be light to moderate traffic. Some of the factors concerning selection are colors and patterning, degree of resiliency required, and project maintenance factors. Certain types may not be suitable for the intended use of the space (e.g. mail carts running continuously over any one of the new rubber or vinyl floor finishes with the raised circular pattern, may prove to be continually annoying to the buildings occupants).

Carpeting has received much recognition in recent years for such reasons as flammability, basic material types, color and patterns and methods of installation. One of the newest innovations is the use of loosely laid carpet tiles generally 18" square. This has proven to be the most effective in conjunction with the newly developed flat cable electrical distribution system. The other two common types of carpet installation are direct glued-down and tackless. In general, the direct glued-down offer less resiliency and is usually less expensive. For plush areas such as an executives office, tackless broadloom over a quality padding is generally preferred. One additional consideration in selecting the type of carpet is whether it is considered part of the capital improvement or furnishings, with respect to our current tax laws.

Editor's Note: Mr. Greenberg is a member of the Editorial Board of ANJ. He is employed by Haines Lundberg Waehler, Basking Ridge and NYC.

conversation with a client



An Interview with Joseph Hilton

In this client interview, representatives of *Architecture New Jersey* spoke with Mr. Joseph Hilton, developer of two investment office buildings in Parsippany, New Jersey. The first of the two buildings is complete and occupied; construction of the second is well underway. The architect for both buildings is Barrett Allen Ginsberg, AIA, PA.

Mr. Hilton has been in the real estate business and involved with office building development for more than twenty-five years. This interview with him was conducted by Philip Kennedy-Grant, AIA.

ANJ: Will you please describe your firm and your construction background in general?

Hilton: These buildings were developed by Devcon Development Corporation, which is wholly owned by myself. Mr. Jack Sulzinski is vice president in charge of construction for the firm, Mr. Arthur Hickson is vice-president/secretary, and I am president of the organization. The buildings are managed by Joseph Hilton and Associates, a real-estate brokerage and management organization with offices in Manhattan and Parsippany, New Jersey.

ANJ: How long has Devcon been involved in investment office buildings?

Hilton: Devcon is an organization which was formed for the purpose of developing office buildings. It has been in existence for two years.

ANJ: At what point in this particular project did you decide to employ an architect? Had you selected a site?

Hilton: The first person who saw the site after myself was Barry Ginsberg. I must say that Barry became an integral, vital part of the development team in the very beginning. He helped me to conceive the development. Before Barry and I took a close look at it, I doubted whether any other developer had the imagination to really recognize the development potential of this particular site.

ANJ: So the architect was involved early on. You had selected the site, though.

Hilton: Although I had selected it, I involved Barry before I had decided to acquire the site.

ANJ: To determine its feasibility?

Hilton: That's right.

ANJ: How did you select Mr. Ginsberg?

Hilton: I selected Barry because I knew Barry's work when he was with The Mack Organization. I knew his work was both innovative and functional, and I realized that Barry had a track record of dealing successfully with some very, very difficult sites at exceptional locations in New Jersey. And this was the kind of architect I required.

ANJ: When you decided to purchase this site, and had spoken with Barry and saw the potential, were you aware of the local process required to get your project approved?

Hilton: Yes. I was familiar with the local process of obtaining site plan approval. I was also aware that we were dealing with some stream and water problems. I knew we would be required to go to the Department of Environmental Protection and secure state approval in order to encroach upon certain streams which crossed the property. But the site was so extraordinary in terms of its location and design potential that all of this was worthwhile.

ANJ: There seems to be a great deal of space in these two buildings dedicated for public use. Is that part of your plan? Or was that a result of making the water feature?

Hilton: There were two reasons for it. First, in dealing with the Department of Environmental Protection and the local planning boards, it would have been very difficult to obtain approval on an intense use of the site, which would result in a major disturbance of the natural flows and would substantially affect the natural drainage of the site. Additionally, the builder can in the long run achieve greater return on investment by not utilizing the site to its maximum potential building area. The reason is that, in the case of suburban office buildings, the most desirable tenants are willing to pay a premium for amenities and open space which will more than justify the lesser density of building on the site.

ANJ: Is this first building, as completed, close to what you originally envisioned? Does it meet your initial expectations?

Hilton: In terms of the physical qualities of the building it's just what I envisioned. The Carrera marble which is used on the exterior of the building is of magnificent quality, and the mechanical systems have operated in a satisfactory manner. The landscaping is finally taking hold.

ANJ: Were there always two buildings in the plans?

Hilton: It was always our intention to build two buildings unless we were to find a user who needed the first building as a corporate headquarters and chose not to develop the second building, but to pay us for the use of the entire eighteen acres of land. The project was planned so that development could be completed with either one building or two buildings.

ANJ: Your first building is complete and leased in a short period of time, and your second building is going up. The whole project exudes an excellence that is generally not found in this kind of building. Is it your opinion that all of this under-utilization of the land, all of this attention to detailed, high-quality design, pays off?

Hilton: I don't think there is any question that it pays off. We have been fortunate to have received, in most difficult times, an excellent construction loan financing for the second building and, in fact, finance the second building on a long-term basis under terms which simply are not obtainable, or obtainable in very, very few cases these days. We secured this financing only because our complex is considered to be absolutely first class in every respect in terms of location, design and quality of materials in construction. I dare say that if we had planned the site in a different way by building greater bulk, using inferior quality materials, and cutting corners in other ways, we could never have financed the second building. Never. So I would say definitely, the use of a quality architect, with quality design and quality materials, and of course a higher initial cost to us has paid off, paid off in spades.

ANJ: On this first building, what was Mr. Jack Sulzinski's position?

Hilton: Jack acted as a field representative.

ANJ: Was he on the site virtually the entire time?

Hilton: Virtually all the time.

ANJ: How did you find that that worked?

Hilton: Well, I think that I feel much more comfortable having Jack build the building himself, rather than go through a general contractor.

ANJ: Is that because of the degree of control you had?

Hilton: I think that the degree of control is very important. You have to make decisions on a day-to-day basis, and having to go through a third party is quite difficult, and can be at times frustrating.

ANJ: Do you think that would be true if you were building other than a speculative building?

Hilton: Well, I think that what you have to do is recognize your limitations. The larger and more complex a job becomes, the less qualified you are to build the job yourself. And if you have to hire a crew of twenty people to build a building, you might as well use the services of a general contractor. I also am not sure that in today's world it's not better to employ a general contractor under a construction management type arrangement, where both parties have a commonality of interests.

ANJ: How long has it been since the first building was completed?

Hilton: April, 1981.

ANJ: Was this your first direct involvement with an architect in your own projects like this?

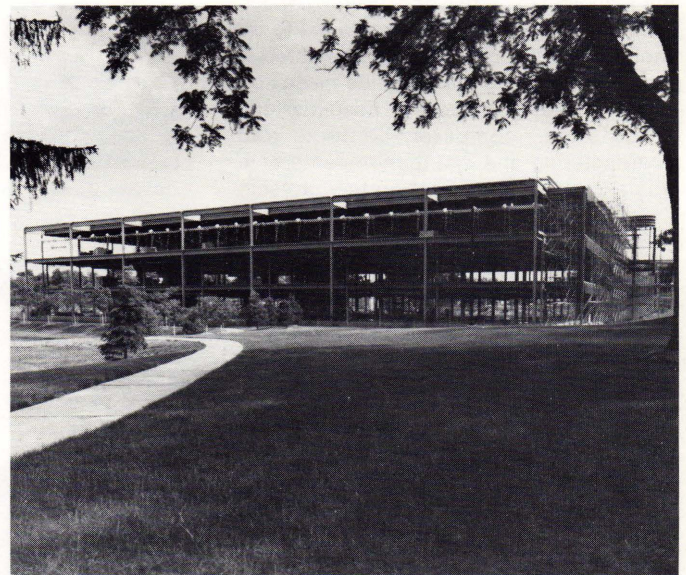
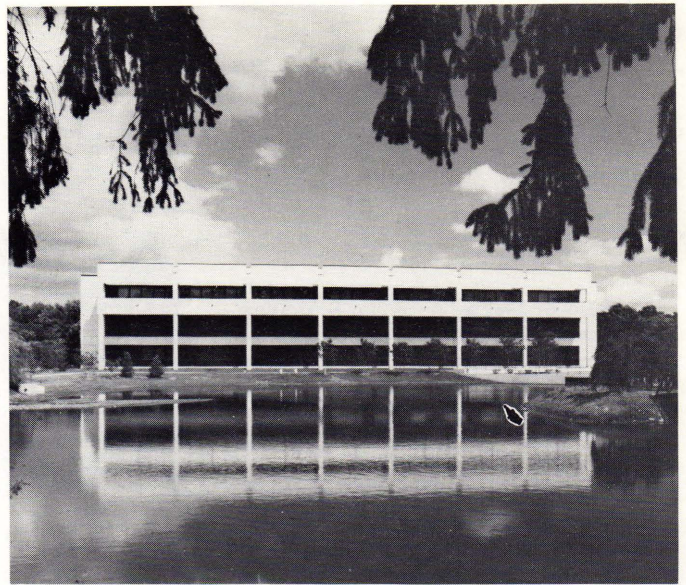
Hilton: Yes, that's correct.

ANJ: What is your reaction to the entire process?

Hilton: I think that Barry Ginsberg did a very fine job in designing the complex, and I think his assistance throughout the development of the project has been most generous and useful. I think what I've learned most is that one has to determine just how an architect's services are going to be utilized, and to define with great precision the architect's responsibilities during the development process. One must understand and identify the two components to architectural services, one being design and the other being implementation, and to determine just what you expect of an architect.

ANJ: You're obviously quite pleased with your project and I think with good reason. One of the things we like to say is that an architect is your best investment. Would you concur with that point of view?

Hilton: I concur wholeheartedly. I believe that an architect should be carefully selected for a particular project. I believe that his responsibility should be meticulously defined and I believe that he should be appropriately compensated. If you're going to cut corners, don't cut corners with your architect.



Joseph Hilton and Philip Kennedy-Grant, AIA.



CUH2A

Princeton, N.J.

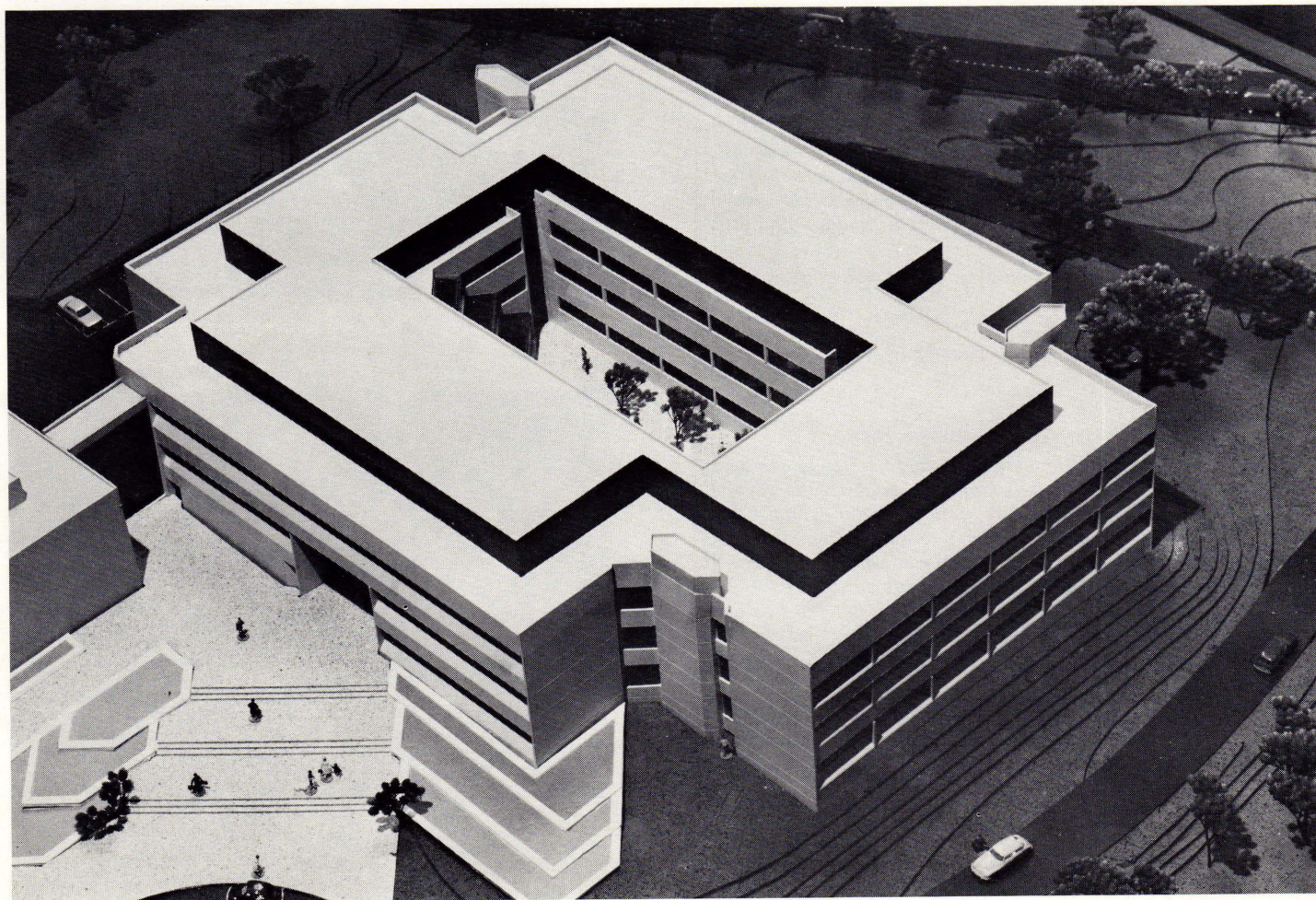
Founded in 1962 when Philip S. Collins, AIA, won the state-wide competition for the New Jersey Pavilion at the New York World's Fair, CUH2A has grown to become the largest architectural/engineering firm in New Jersey. CUH2A now consists of nine Partners, eight Associates, and a staff of 175 in the fields of architecture, engineering, interior design and graphics. On the eve of its 20th anniversary, the firm moved to expanded headquarters it designed and developed at 600 Alexander Road.

Collins attributes the firm's growth to efficient project delivery, combined design and technical expertise and diversity of services. As New Jersey has continued to attract major corporations, CUH2A has prospered by designing the facilities these corporations need: corporate headquarters, laboratories, computer centers, and manufacturing and distribution centers. In progress at CUH2A are laboratory projects



CUH2A's Managing Partners: (l to r) Kurt M. Anderson, AIA, PA; Harrison J. Uhl, AIA, PA; Philip S. Collins, AIA, PA.

Central Research Laboratory, Pfizer, Inc., Groton, Connecticut.



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with a combined construction cost exceeding \$150 million and computer and office facilities exceeding \$100 million.

CUH2A has developed a continuing relationship with many of the major United States corporations. Corporate clients the firm has served include: American Cyanamid, American Home Products Corporation, AT&T, Continental Insurance Company, Educational Testing Service, Exxon, GAF, Ingersoll-Rand, IBM, Johnson & Johnson, Lockheed Electronics, Mobil, Pfizer, RCA, and Squibb.

Current health care clients include Middlesex General Hospital, St. Peter's Medical Center, Alexian Brothers Hospital and the Carrier Foundation. Among the educational institutions CUH2A has served are Trenton State College, Princeton University, Atlantic Community College, Ocean County College, Rutgers University and New Jersey Institute of Technology.

CUH2A's geographic range now extends to the Northeast, Midwest and Southern states. The firm also maintains offices in Egypt and Saudi Arabia. Major international projects include a 2500 unit housing complex in Cairo and sports facilities in Riyadh and Dammam, Saudi Arabia.

By offering both architectural and engineering services, CUH2A integrates design with solutions to today's complex technical and environmental problems. This combined effort assists coordination of architectural and engineering systems while controlling costs and schedules. Problems addressed by the firm run the gamut from creating a laboratory environment conducive to interaction among scientists, to preparing a facilities development plan for the Delaware and Raritan Canal State Park.

CUH2A's engineering services include civil, structural, mechanical and electrical enabling the firm to provide solutions to critical issues in such expanding technological areas as pharmaceutical and chemical research and information processing. CUH2A has an energy group, comprised of architects and engineers, which applies a wide variety of design concepts to reduce energy usage in both new and retrofit projects. ASHRAE has recognized this work with awards on the regional, national and international level.

CUH2A's interior design department has the advantage of access to the resources of the architectural and engineering departments. The firm pioneered the design of work station systems before they became commercially available, and has continued to develop specialized applications of the office landscaping concept for both new and renovated space. CUH2A's most recent addition, a graphic design department, provides clients with identity programs, brochures and signage systems.

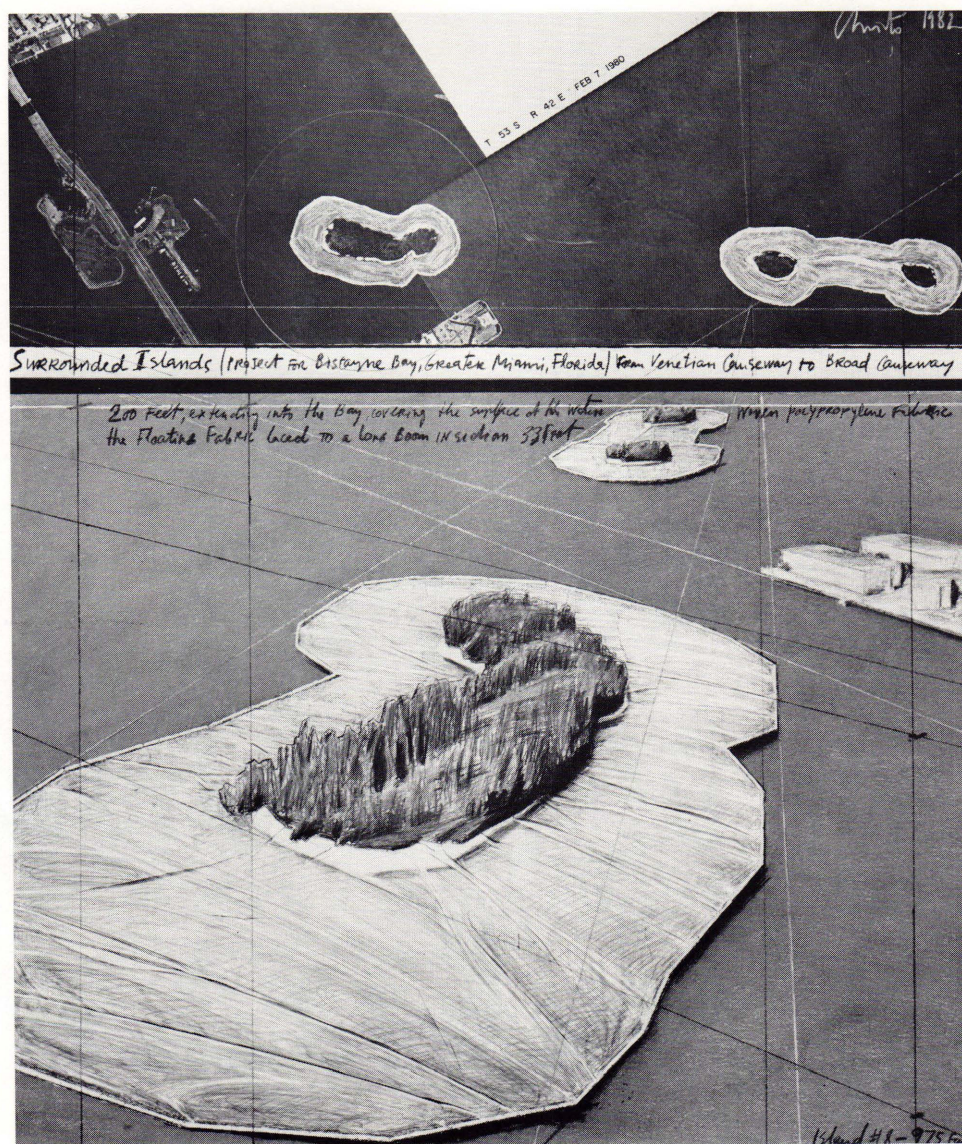
Despite recent economic conditions, new and established clients continue to retain CUH2A for major commissions. The firm's continuing growth is evidence of an ability to deliver both design quality and technical expertise for every client.



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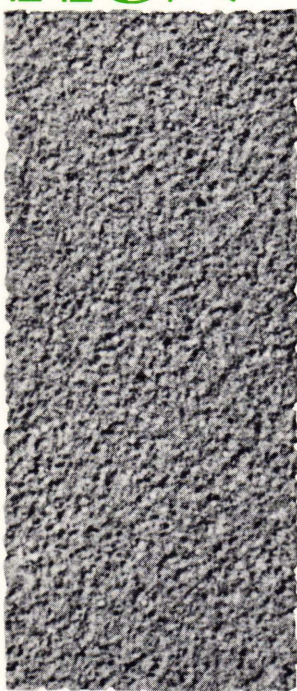
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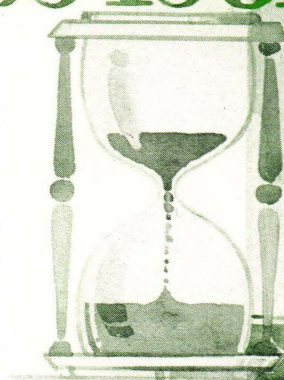


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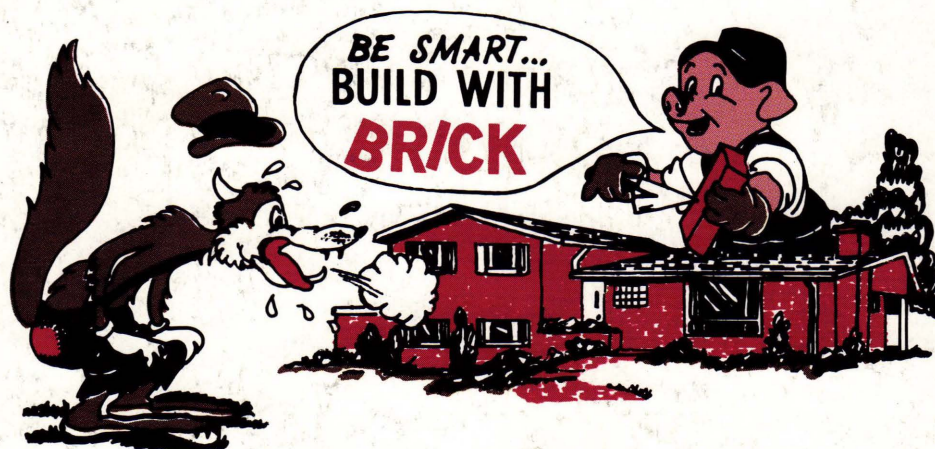
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